

# RECOVER Monitoring and Assessment Plan (MAP) Purposes and Products

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# Purpose of the MAP

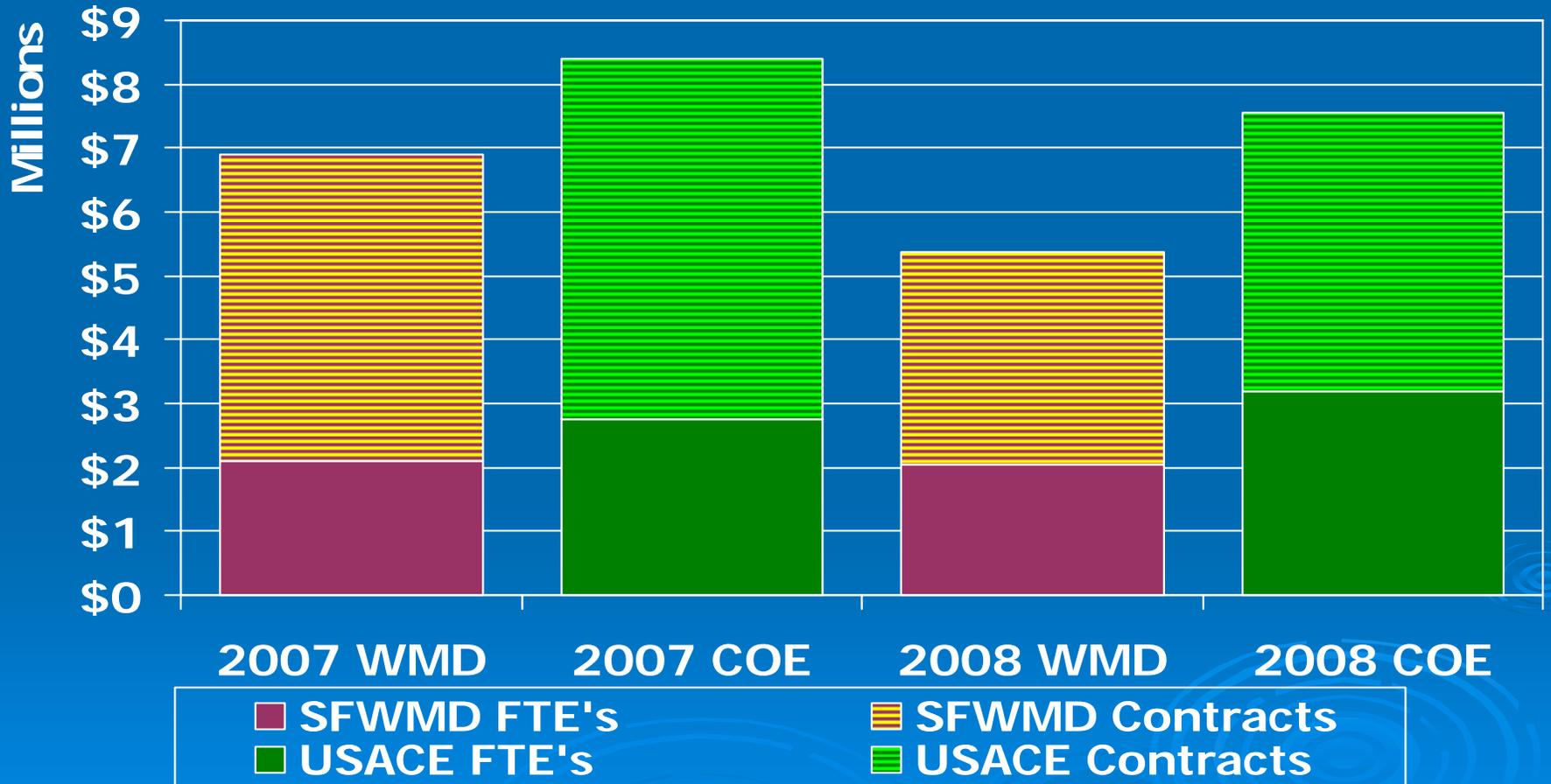
- Develop a Pre-CERP environmental baseline against which to measure restoration success
- Measure system-wide effects as restoration projects come on line
- Provide information to guide adaptive management decisions

# Key RECOVER Products

- System Status Report:
  - Biannual integrative report of ecosystem health
  - Based on published, peer reviewed conceptual ecological models
  - Serves as a basis for 5 year reports to U.S. Congress
- Performance Measures/Interim Goals and Targets:
  - Metrics against which to measure restoration progress
  - Guidance for adaptive management activities

# RECOVER Budget

FY 07 Actual Expenditures, FY 08 Budgeted



# Lake Okeechobee MAP Module Monitoring



**Water Quality**  
Environmental  
Resource  
Assessment  
Division



**Phytoplankton**  
Lake O Division

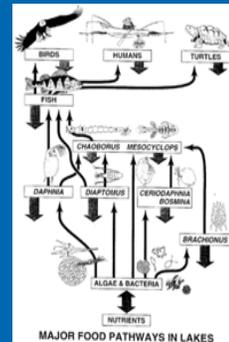


**Fish  
Population**  
\$75K



**Emergent  
Vegetation**  
Lake O Division

**Stressor – Indicator Response Interactions**



**Faunal  
Relationship  
to Habitat  
Quality**  
\$70K



**Lake Stage**  
SFWMD Operations



**Exotic/Invasive  
Plants**  
Lake O Division /  
Veg Mgmt Section



**Macroinvertebrate**  
\$75K



**SAV**  
Lake O Division

# Key Indicators of Restoration Success

## Northern Estuaries

*Includes: SLE/IRL,  
Caloosahatchee, Loxahatchee  
and LWL*



Stressor      Response

Water Quality,  
Quantity, Timing and  
Distribution of Flows

Data provided by various  
District and non-district  
sources

Fisheries \$90K



SAV \$200K

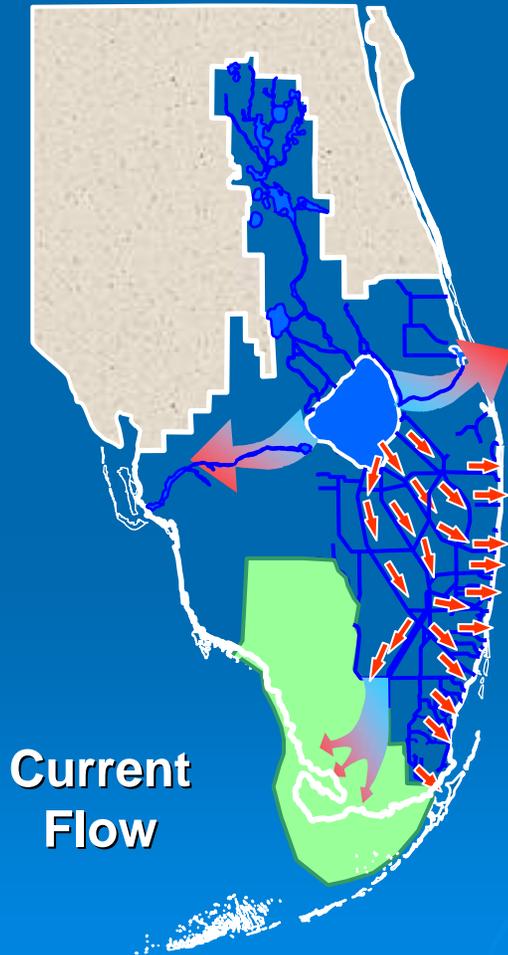


Oysters \$365K

Benthos \$150K



# Greater Everglades



## MAJOR STRESSORS

**Compartmentalization**

**Hydrology**

**Nutrient  
Inputs**

**Loss of Spatial  
Extent**

**Stressor – Indicator Response Interactions**

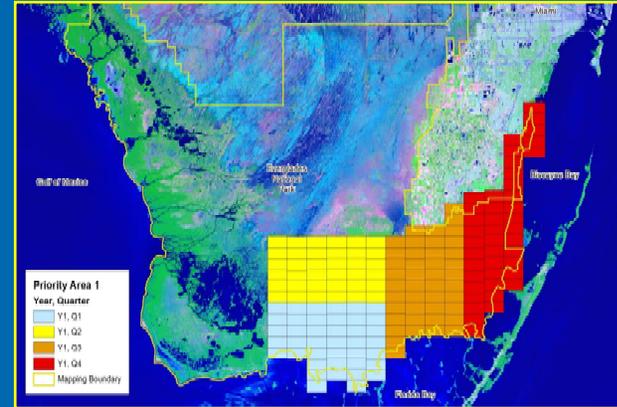
# Everglades Landscape



Ridge & Slough & Tree Islands  
**\$198,000 SFWMD**  
**\$257,593 USACE**



Coastal Gradient  
Flows, Nutrients, and  
Sediment Accretion  
**\$671,076 USACE**



Vegetation  
Mapping  
**\$362,440 SFWMD**



Marl Prairie  
**\$98,681 USACE**

# Everglades Community Monitoring Predator-Prey Food Web



Bird Colonies and  
Survival Rates  
**\$570,026 USACE**



Prey in Forested  
Wetlands  
**\$409,585 USACE**



Wet and Dry Season  
Prey - Food Web  
Dynamics  
**\$687,000 SFWMD**

# Everglades Community Monitoring Alligators and Crocodiles



Body Health and  
Juvenile Survival  
Rates

**\$537,389 USACE**

# Everglades Monitoring Support



Helicopter  
Contract  
**\$720,000 SFWMD**



Everglades  
Depth Estimation  
Network (EDEN)  
**\$499,830 USACE**



Soil Nutrients  
**\$106,040 USACE**

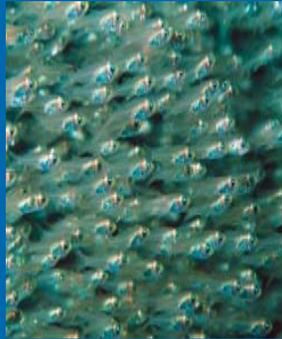
# Southern Estuaries MAP Module Monitoring



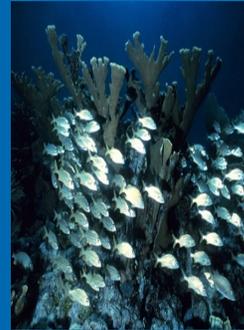
**Freshwater Flow**



**Water Quality**



**Fisheries**  
\$351K ACOE



**S FI Fish Habitat**  
\$250K

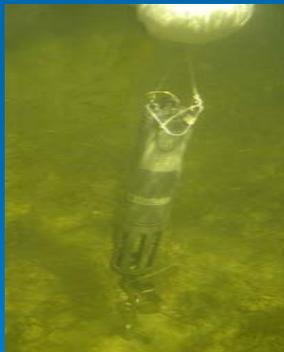


**BBay Benthic Habitat**  
\$124K ACOE

## Stressor – Indicator Response Interactions



**Nutrient Inputs**



**Bisc Bay Nearshore Salinity**  
\$167K ACOE



**Shark R & WW Bay Oysters**  
\$100K



**Seagrass, Fish & Invertebrate**  
\$392K ACOE



**BBay Nearshore Epifauna**  
\$167K ACOE

# NAS Comments...

## **Monitoring and Assessment Plan (MAP)**

- well-designed, and statistically defensible MAP
- development, peer review and publication of CEMs

## **Adaptive Management (AM) strategy**

- sound strategy for execution of AM program
- encourages incorporation of robustness in project design
- explicit reconciliation of project level actions and ecosystem level responses.

A landscape photograph showing a field of tall, golden-brown grass in the foreground. In the middle ground, there is a line of trees, including several tall, thin trees and some shorter, bushier ones. The sky is a pale, hazy yellow, suggesting a sunrise or sunset. The overall tone is warm and soft.

QUESTIONS?  
Q